

Description of Two New Species of the *Angustipennis* Group of the Dipterous Genus *Tipula* Linnaeus, with Table of Species.

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The species of this group are characterized by pale gray to brownish, or reddish-brown wings, mottled, with predominantly pale spots and a few dark, fuscous spots. The latter are confined to the origin of *Rs* (absent in *beaulieui*), end of *Sc* and the stigma and its proximity. A pale spot always present at two-thirds or three-fourths of cell *M*, another spot, generally large but often absent, just before the middle of cells *Cu* and *A1*; this spot frequently extends into cell *M*. Pale spots before and behind the stigma, generally present and conspicuous, the latter frequently extends as a fascia into cell 1st *M2*, or even *M4*. No fuscous spots at base of cells *R* or *M* and no pale spots along the posterior wing-margin.

Key to the species.

1. Eighth sternite of male, with one or more appendages..... 2
Eighth sternite of male simple..... 4
2. With median and lateral appendages..... 3
With median appendage only..... *serta* Loew
3. Yellow; ninth tergite of male short, scarcely emarginate in the middle *scnega* Alex.
Darker, yellowish-gray. Ninth tergite of male longer, with a deep, broadly V-shaped emargination..... *neptun* sp. n.
4. Antennae unicolorous, fuscous..... 5
Not as in the alternative..... 8
5. Abdomen reddish 6
Abdomen not reddish 7
6. Abdomen without longitudinal stripes, wings reddish-brown, *shasta* Alex.
Abdomen trivittate, wings grayish-fuscous..... *angustipennis* Loew
7. Thoracic stripes margined..... *tristis* Doane
Thoracic stripes not margined..... *marina* Doane
8. Flagellar joints unicolorous..... 9
Flagellar joints, except the first, distinctly bicolored..... 15
9. Dark, blackish, thoracic stripes not margined; antennae dark brown, second joint yellowish..... *nigrocorporis* Doane
Not as in the alternative..... 10

10. Black; abdomen not vittate.....*helvociucta* Doane
 Not as in the alternative.....11
11. Thoracic stripes not margined.....*subtenuicornis* Doane
 Thoracic stripes margined.....12
12. The median thoracic stripe divided by a longitudinal line.....13
 Not as in the alternative.....*ignota* Alex.
13. Cell *R*4+5 white in its basal portion.....*centralis* Loew
 Not as in the alternative.....14
14. Ninth tergite of male with deep, U-shaped emargination,
carolina Alex.
 Ninth tergite short and broad, posterior margin broadly concave*canadensis* Loew
15. Flagellar joints yellow, basal enlargement dark fuscous,
balioptera Loew
 Flagellar joints fuscous, basal enlargement yellow.....*baudicui* sp. n.

Tipula neptun spec. n.

General coloration yellowish-gray; allied to *senega* Alex., *pallida* Loew.—Wings gray, pale, markings distinct. Ninth tergite of male with deep, broad V-shaped emargination. Eighth sternite with median and lateral appendages.

♂—Length, 16 mm.; wing, 15 mm. Head dusky, yellowish-gray. Rostrum of moderate length, concolorous; frontal prolongation with ill-defined median darker line; nasus depressed. Palpi brown, fourth joint shorter than the preceding joints together. Antennae of moderate thickness; extended they reach to about the end of the scutel; scapal joints dull yellow, first flagellar joint light brown, the following joints fuscous, the basal enlargement dark fuscous, distinctly emarginate beneath; setae not or but little longer than the respective joints; pubescence very short, white.

Thoracic dorsum gray; stripes brown, the median prescutal stripe divided by a fusiform line of the ground color, the exterior margin of the stripe with a row of whitish hairs. Scutum gray with a dark, fuscous patch each side. Scutel yellowish-fuscous, with a slight sheen. Postnotum gray, with fuscous median stripe, wider anteriorly. Pleuro-dorsal membrane dark yellow. Pleura gray, grayish white pruinose. Halteres pale, club fuscous. Legs yellowish-fuscous. Pilosity very short, black, appressed. Coxae grayish-yellow; femora sordid yellow basally, darker toward the apex; tibiae light fuscous; tarsi dark fuscous, the metatarsi much shorter than the tibiae. Wings gray, darker in apical portion, the pale markings distinct, spots in 1st *r* and 2nd *r*, *r*2 and *r*3, *r*4+5, basal part of cell 1st *M*2, base of cell *M*4, a large spot at three-fourths of cell *M* and a large spot at one half of cell *C*_u and *A*1; this spot extends indistinctly into cell *M*.

Abdomen yellow, light brown posteriorly, a fuscous dorsal stripe

interrupted at the incisures, a lateral stripe also interrupted at the incisures and becoming obsolete on tergites seven and eight; lateral margins of tergites whitish. Venter obscure yellow, brownish posteriorly. Hypopygium not large, light brown. The eighth sternite slightly emarginate, with a rather long, median appendage, bifid at the apex and a rather long, digitiform appendage at each lateral angle, bearing a hair pencil at its apex. Ninth tergite broad, with a deep, broad V-shaped emargination, each lateral lobe with a sharp point at its apex; ninth sternite with deep V-shaped emargination, containing two pale, hairy appendages. Pleural suture complete; the pleurite somewhat prolonged distad, subacuminate. The upper external appendage long, slender, directed dorsad and bearing a pencil of hair at its apex; the inner appendage consists of a perpendicular plate, the anterior end of which abuts beneath the emargination of the ninth tergite, posteriorly this plate expands into a horizontal lamina, broadly emarginate along the posterior margin, the distal end of the perpendicular plate turns outwardly.

♀—Length, 20.5 mm.; wing, 17.5 mm. Antennae short, scapal joints brownish yellow. The dorsal, abdominal stripe more widely interrupted beyond the second incisure, the lateral stripes broader and more conspicuous, the lateral tergal margin more yellowish. Ovipositor brown, valves rather long, gradually narrowed posteriorly, obtusely pointed, the ventral pair fully three-fourths the length of the dorsal valves.

Holotype—♂, Bullion Peak, Park County, Colorado, 11,000 feet, May 20, 1914. (E. J. Oslar.) *Allotype*, ♀, topotypic, 11,500 feet, August 20, 1914. *Paratypes*, topotypic, 9 males, 3 females. Types in author's collection.

Agrees with *T. senega* in the construction of the eighth sternite of the male, but differs from this species in the gray thorax and the longer and deeply emarginate ninth tergite of the male. In its hypopygeal construction this species shows considerable similarity to *impudica* and its allies, the ninth sternite, however, is much less prolonged.

Tipula beaulieui spec. n.

Thoracic stripes margined. Eighth sternite of male abdomen simple, acutely produced in the middle. Flagellar joints distinctly bicolored, brown, basal enlargement yellow.

♂—Length, 15 mm.; wing, 14 mm. Head gray; rostrum rather short, sordid yellow; frontal prolongation gray, nasus short, obtuse. Palpi light brown, fourth joint fuscous, shorter than the three preceding joints together. Antennae not elongate; scapal joints dull yellow; first flagellar joint yellow, infusate apically, following joints fuscous,

basal enlargement dark yellow, cylindroidal, scarcely emarginate above the basal enlargement; setae shorter than the respective joints; pubescence very fine, white. Occiput grayish-fuscous, with an indistinct, darker, median line, orbital margins pale.

Thoracic dorsum brownish-yellow. Pronotum with dark fuscous, median line. Prescutal stripes brown, distinctly margined, especially the lateral ones, the median stripe divided by a narrow line of the ground color, which is a little wider behind the middle; fuscous spots of scutum margined. Scutel and postnotum gray, the former with a fine, fuscous, median line, the latter with broad, lateral, fuscous stripes and an abbreviated median line. Pleuro-dorsal membrane sordid yellow. Pleura gray, mesosternum and mesepimeron darker. Halteres pale yellow, club infuscate. Legs sordid yellow, pilosity black, very short. Coxae yellowish-gray, whitish pruinose; femora and tibiae darker at the apex; tarsi fuscous, outer joints darker; metatarsi shorter than the tibiae. Wings gray, more yellowish in basal part and along cell *Sc*, darker in apical portion: no fuscous spot over origin of *Rs*, stigma brown; the broad post-stigmal spot extends through cell *R2+3*, narrows in cell *R4+5* and ends very conspicuously in cell *1st M2*; the outer spot in cell *M* large and conspicuous; a rather broad streak in cell *A1* close to vein *A1*, no pale spot in cell *Cu*.

Abdomen orange yellow, first tergite grayish-yellow; three longitudinal, fuscous stripes, the dorsal stripe conspicuous, entire, extends from base to end of seventh tergite; lateral stripes ill defined, and consisting of irregular patches on the segments; lateral margin of tergites whitish. Eighth sternite simple, acutely produced in the middle. Hypopygium yellowish-gray, rather small; ninth tergite moderately large, channeled along the middle, the posterior margin with V-shaped emargination; ninth sternite with V-shaped emargination. Pleural suture complete; pleurite truncate posteriorly, hind angle acuminate; outer apical appendage small, lanceolate, curved dorso-cephalad; the inner appendage large, perpendicular, blade-like; the lower appendage consists of a horizontal lamina, ending posteriorly in an upturned, curved club, emarginate at its tip and turned outward.

Holotype— δ , Ottawa, Canada, January 9, 1912. (Germain Beaulieu.) In author's collection.

Named in honor of Mr. Germain Beaulieu, to whom I am indebted for many favors.

Readily distinguished from all the other known members of the group, in the distinctly bicolored flagellar segments, brown with yellow, basal enlargement. In hypopygeal construction this species greatly resembles *T. angustipennis*.